

# Nitric Oxide improves plant tolerance under zinc treatment in *Lepidium sativum* L.

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## 1 ABSTRACT

Nitric oxide (NO) is dynamic molecule implicated in diverse biological functions demonstrating its protective effect against damages induced by abiotic stresses. The present study investigated that exogenous NO (100 and 300 mM sodium nitroprusside) prevented the injurious effect of Zn- metallic stress (300 and 750  $\mu$ M of ZnSO<sub>4</sub>) on plant growth. *Lepidium sativum* exposed to different Zn doses (300 and 750  $\mu$ M) reduced plant growth, decreased chlorophyll content and reduced the nitrate reductase activity (NR) in leaves. Exogenous NO alleviated Zn toxicity in *Lepidium sativum* L., especially under 750  $\mu$ M -Zn dose combined to 300 mM of NO donor. The applications of NO also improved the nitrogen assimilation especially in plants treated with 300 mM of NO donor. These results indicate that NO treatment mitigated Zn toxicity trough with proline and sugar content reduction.